

Applic. No. 10/010,164  
Amdt. dated August 9, 2004  
Reply to Office action of May 7, 2004

Remarks/Arguments:

Reconsideration of the application is requested.

Claims 1-18 remain in the application. Claims 1 and 18 have been amended.

In the second paragraph on page 2 of the Office action, claims 1 and 18 have been rejected as being fully anticipated by Kozuka (U.S. Patent No. 5,691,570) under 35 U.S.C. § 102.

The rejection has been noted and the claims have been amended in an effort to even more clearly define the invention of the instant application. The claims are patentable for the reasons set forth below. Support for the changes is found in Figs. 1-4 and on page 20, line 18 to page 21, line 5 of the specification.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claims 1 and 18 call for, *inter alia*:

a first group of the at least two groups of said metallic bonding pads ordered in the standard pin assignment, a second

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group of the at least two groups of the metallic bonding pads ordered in the mirror-image pin assignment, the number of the bonding pads being twice the given number of pins.

The Kozuka reference discloses IC chips in which the integrated circuit patterns are fabricated with either a normal configuration or a reverse configuration. This is explicitly disclosed in Figs. 9-13, which show arrays of chips with a normal (p) and reverse (q) configuration (column 6, lines 37-39). The positioning of the bonding pads (16 and 20) on a chip with either a normal or reverse IC pattern is symmetric about the center line (Fig. 16). Kozuka teaches that each bonding pad is associated with a pin assignment (Figs. 18 and 20).

Furthermore, with reference to Fig. 21 of Kozuka, IC pattern (122) has a normal configuration and IC pattern (124) has a reverse configuration. Each IC pattern includes 24 bonding pads. It is applicants' position that each bonding pad of each IC pattern is associated with a pin assignment. Kozuka does not disclose the pin assignments for the chips shown in Fig. 21. However, Fig. 22 discloses that the chip 12 of Fig. 21 can be separated to form a normal and a reverse chip. Moreover, Figs. 18 and 20 show that each bonding pad of either a normal or a reverse chip is associated with a pin

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assignment. Therefore, it is applicants' position that Kozuka discloses that each bonding pad is associated with a pin assignment.

Kozuka does not show a first group of the at least two groups of said metallic bonding pads ordered in the standard pin assignment, a second group of the at least two groups of the metallic bonding pads ordered in the mirror-image pin assignment, the number of the bonding pads being twice the total given number of pins, as recited in claims 1 and 18 of the instant application. As can be seen from the above-provided comments, Kozuka discloses that each bonding pad is associated with a pin assignment. This is contrary to the invention of the instant application as claimed, in which a first group of the at least two groups of said metallic bonding pads is ordered in the standard pin assignment, a second group of the at least two groups of the metallic bonding pads is ordered in the mirror-image pin assignment, the number of the bonding pads is twice the total given number of pins.

Even though claims 1 and 18 are believed to be allowable, the following comment pertain to the non-obviousness of claims 1 and 18.

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It is the object of the present invention to avoid the fabrication of two types of semiconductor chips as disclosed by Kozuka. In the present invention, this is achieved by providing a chip body with a single layout, which includes two groups of bonding pads, one group with a normal configuration and one group with a reverse configuration. These configurations allow the same chip to be mounted in the normal or reverse configurations on an interposer simply by a rotation or by a translational movement of the chip.

The structure of the instant application is not obvious over the Kozuka reference.

Kozuka provides a person of ordinary skill in the art no motivation to avoid the fabrication of two types of chips, which include either a normal or a reverse IC pattern. Moreover, Kozuka gives no suggestion to a person of ordinary skill in the art to provide a chip including two groups of bonding pads, where each group has a number of bonding pads which corresponds to the number of pins in one pin assignment as recited in the claims of the instant application. Kozuka does not suggest that a person of ordinary skill in the art provide a chip with twice as many bonding pads as required for mounting the chip on an interposer.

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In the third paragraph on page 3 of the Office action, claims 2-17 have been rejected as being obvious over Kozuka (U.S. Patent No. 5,691,570) under 35 U.S.C. § 103. Since claim 1 is believed to be allowable, dependent claims 2-17 are believed to be allowable as well.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-18 are solicited.

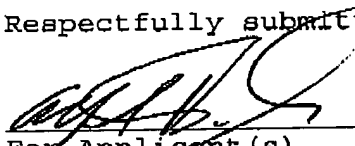
In the event the Examiner should still find any of the claims to be unpatentable, counsel respectfully requests a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

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Please charge any other fees which might be due with respect  
to Sections 1.16 and 1.17 to the Deposit Account of Lerner &  
Greenberg P.A., No. 12-1099.

Respectfully submitted,

  
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For Applicant(s)

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